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West Europe Report

(FOUO 51/79)

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COUNTRY SECTION FEDERAL REPUBLIC OF GERMANY

FRG ROLE, INTERESTS IN ANTARCTICA VIEWED

Bonn EUROPA-ARCHIV in German 10 Jul 79 pp 389-400

[Article by Rainer Lagoni, Research Assistant at the Institute for International Law, Kiel University: "The Federal Republic of Germany and the Antarctica Treaty"]

[Text] It was almost 20 years ago, on 1 December 1959, that the Antarctica Treaty was signed in Washington, the American Federal capital.[1] The treaty was the result of a conference, to which the American Government had invited those states that during 1957/58, the International Geophysical Year, has participated in the study of Antarctica. On 23 June 1961, after ratification by all of the 12 signatory states--Argentina, Australia, Belgium, Chile, France, Great Britain, Japan, New Zealand, Norway, South Africa, the Soviet Union, and the United States of America--, the treaty came into effect, introducing a peaceful phase of international cooperation on the "continent of scientists," on which just a few years ago territorial disputes had led to clashes between British, Chilean and Argentinian military units.[2] According to the treaty, the golden age of Antarctica, as these years of fruitful international scientific cooperation under the protective shelter of the Antarctica Treaty will perhaps be called some day, will extend up to June 1991--which according to Article XII is the earliest date for a revisory conference--, but even now there are dark clouds, i.e. difficult problems, in the usually clear skies of cooperation between the Antarctic powers.

After scientists from the Federal Republic--continuing the long and fruitful tradition of German Antarctic research[3]--had in the 1960's begun intensively to participate in the study of Antarctica, this distant continent, 98 percent of which is covered by ice, has of late begun to attract the attention of the men responsible for German foreign policy. On 5 February 1979, the Federal Republic acceded to the Antarctica Treaty of 1 December 1959.[4] The Federal Republic not only wants to commit itself--as an ordinary treaty member[5]--to observing the treaty provisions; it also intends--through "carrying out extensive research projects in Antarctica and through the establishment of a scientific research station

or the dispatch of a scientific expedition"--to become a temporary consulting member in accordance with Article IX.[6] Consulting members enjoy special rights in regard to changes or amendments of the Antarctica Treaty as well as the--in regard to practical work--important right of participation in the consultative meetings which as a rule take place every 2 years and at which in confidential talks all the current and future problems concerning Antarctica are discussed. A membership application to this effect has been submitted to the assembly of consulting members, and in the 1979 budget of the Ministry for Research and Technology, funds have been allocated for a research ship and for the establishment of a polar institute in the Federal Republic and of a German research station in Antarctica. The plans provide for a station with a staff of approximately 30 persons which is to be established in the summer of 1980/81 on the Filchner ice shelf, for a vessel equipped for negotiating icy waters and for a polar institute in a North German university town.[7]

Problems

In considering the problems concerning the Antarctica Treaty, one should be mindful of the fact that in regard to important aspects the treaty has proved very effective and has become a crucial element in regard to the preservation of peace in Antarctica and the development of fruitful international cooperation. These aspects are: The demilitarization--guaranteed by a system of mutual inspection--of Antarctica and the prohibition of nuclear weapons on that continent[8], the prohibition of the removal of nuclear waste, and the freedom of scientific research in the entire area covered by the treaty, including the exchange of scientists and information.[9] Contrasting with these positive results are three large problem areas, which in the last analysis resulted from developments which in 1959, the year the treaty was concluded, had not been foreseeable or had deliberately been left out of consideration by the contracting parties, namely from the increasing effects of human civilization on the Antarctic environment and from the growing interest on the part of several states in the natural resources of this continent and of the sea surrounding it.

1. The parties concluding the Antarctica Treaty of 1959 left in abeyance the question as to how the Antarctic environment should be protected--a lacuna that so far has only insufficiently been bridged by the consulting members' joint recommendations regarding environmental protection. Since some of the signatories and several third countries are interested in an economic exploitation of the natural resources of Antarctica, scientific circles are concerned about the Antarctic ecosystem and the integrity--so crucial for many research projects--of the Antarctic environment.

2. Since it is known that the shelf areas of the Antarctic continent are likely to contain mineral oil and natural gas and since one cannot rule out the possibility that before the end of this century metal deposits worth mining will be discovered[10], the contractual relations have become increasingly strained. Tension has arisen between some of the industrial

states interested in the exploitation of the Antarctic resources and those signatories that by virtue of their territorial rights claim sovereignty over these natural resources.

3. There are not only internal tensions resulting from the treaty; criticism is being voiced also by third parties, by circles in the developing countries, demanding that the natural resources of Antarctica be shared by the Third World.

The Economic Exploitation of Antarctica

If one disregards some rather unusual--as yet insignificant--uses of the area covered by the treaty such as Antarctic tourism, the much-discussed possibility of towing icebergs as fresh-water reservoirs to California or the Arab Peninsula, or the Australian plan of using the Antarctic climate for the energy-saving storage of meat, the only economically interesting area left is the exploitation of the natural resources of this continent. In this respect, one has to distinguish between the utilization of animal and plant resources, which has been going on for many years, and the future exploitation of mineral resources.

The Federal Republic is obviously not interested in the--internationally regulated--hunting of whales and seals.[11] Long-distance fishing in Antarctic waters, on the other hand, appears to offer the Federal German fishing industry, which due to the extension of national fishery zones lost in the last few years many of its traditional fishing grounds in the North Atlantic, the solution to a perilous problem. According to estimates by the UN Food and Agricultural Organization (FAO), in 1976 approximately 0.2 to 0.4 million tons of fish were caught in Antarctic waters, primarily by fishing fleets from Japan and the Eastern bloc; during the same year, the total world catch of saltwater fish amounted to approximately 55 million tons, with the Federal Republic accounting for 0.43 million tons.[12] It has been reported, however, that individual stocks in Antarctica are endangered by overfishing--a threat which is especially serious on account of the slow growth and the delayed sexual maturity of some of the species of commercially useful fish. But it is not only ecological objections to an unrestricted harvesting of Antarctic fish stocks that must be taken into consideration; one must also deal with the economic doubts concerning the profitability of Antarctic fishing, doubts which are concerned above all with the remoteness of the fishing grounds, with the necessity of transporting the catch to the consumers and with the suitability of the presently available German fishing boats.

In commercial krill fishing, the problems are of a different nature. In regard to these shrimp-like small crabs of the Antarctic seas, which move about in swarms and whose most common species is Euphausia Superba--approximately the size of a finger--, an annual catch of as much as 50 million tons is considered justifiable.[13] This would be almost equivalent to double the annual world catch of saltwater fish. In fact, several states,

above all the Soviet Union and Japan, have been recording annual catches of over 20,000 tons of krill. While technical difficulties in connection with the radiolocation of the krill swarms and the quick processing and storage aboard ship will be overcome in the foreseeable future, the greatest obstacle is still the problem of marketing this small crab, which is a good source of protein, for human consumption. Whereas in the Soviet Union and in Japan krill products have been used by the consumers for a number of years, pertinent tests in the Federal Republic involving krill soups and krill sticks (similar to fish sticks) make it appear unlikely that the eating habits of our people can be changed to such an extent that larger quantities of such products could be sold here.

Theoretically, in Western Europe krill could be more important as a protein feed, as compared to its use for human consumption. In this respect, it would be necessary to market the krill meal at a competitive price, and in view of the long distances involved and the present feed prices, this would be difficult. Moreover, before one decides to promote through state subsidies the expansion of commercial krill fishing, one must examine--for reasons of economic policy--whether in the European feedstuffs market there is any demand for krill as a protein feed.

In regard to export possibilities for krill products, little information is as yet available. At the very least, krill could be an important protein source for many Third World countries, whose people suffer from chronic protein deficiency. Consequently, the Federal Republic's experience in the field of commercial krill fishing could possibly be used in terms of developmental policy.

However, in regard to unrestricted commercial krill fishing, there are ecological objections as well. Krill occupies a central place in the Antarctic ecosystem. Fish, whales, seals and birds feed on krill. Excessive inroads on the available krill stocks are likely to result in far-reaching consequences for the entire ecological system of the Antarctic seas. At present, reliable data concerning the total biomass are still lacking; moreover, important facts concerning the biology of krill are still unknown. The consulting members are presently engaged in preparing an international agreement concerning krill fishing as well as comprehensive international regulations applying to all animal and plant resources of the Antarctic seas. An international agreement of this kind will probably not include a general prohibition or a temporary moratorium for commercial krill fishing.[14] But before the Federal Republic subsidizes the building of a large Antarctic fishing and supply fleet for commercial krill fishing, the competent ministries should take into consideration the effects of a future international agreement on present open fishing in Antarctica. Politically, the Federal Republic as the youngest consulting member can hardly afford not to coordinate its fishery policy with such an agreement. Generally speaking, the hope that the Antarctic fishing grounds hold out to the German deep-sea fishing industry is encumbered by many economic and political question marks.

In regard to the mineral resources of the Antarctic continent, the Federal Republic's interests are much more obvious. Since the entire domestic economy is dependent on oil and ore imports, the Federal Republic should support the search for oil and natural gas on the continental shelves of Antarctica and through prospecting operations participate in the search for exploitable nonferrous metals and valuable minerals on the Antarctic continent. In doing so, however, the Federal Republic must strictly observe the agreements concerning the protection of the marine environment--which also apply to the Antarctic seas--and the special environmental protection regulations established by the consulting members. The consulting members are presently working toward the establishment of international regulations concerning the exploitation of the mineral resources of this continent.

The Future of the Antarctica Treaty

A serious threat to the continuance of the Antarctica Treaty are territorial disputes such as occurred in the last few years even between some of the consulting members; to be sure, these disputes occurred north of 60° south latitude, i.e. outside the area covered by the treaty. There were intense political disputes between Argentina and Great Britain concerning the Falkland (Malvinas) Islands and a conflict between Argentina and Chile--accompanied by the threat of force--over a few small islands at the eastern end of the Beagle Canal, close to the southern tip of the Latin American continent. Politically, these disputes must be viewed in connection with the territorial claims asserted by these countries, claims which on and near the mineral-rich Antarctic Peninsula are overlapping.

However, the gist of the territorial problem is not so much the issue of overlapping claims as the question whether individual states are actually entitled to claim certain Antarctic territories as their own. Argentina, Australia, Chile, France, Great Britain, New Zealand, Norway and South Africa base their claims on their having discovered and taken possession of the country and on South America's geological links with the Antarctic Peninsula.[15] Since in terms of international law these claims are questionable, their validity is essentially based on whether they are recognized by third states. So far, such recognition has been forthcoming only to a limited extent. In regard to the territorial question, the Antarctica Treaty was a compromise in that according to Article IV no new claims to territorial sovereignty in Antarctica can be raised during the term of the treaty, while preexistent claims are neither recognized nor repudiated by the treaty. Acts committed during the term of the treaty in the area covered by it do not constitute any legal precedent in regard to the territorial question. However, the treaty does not prevent any party from repudiating or recognizing as politically justified old territorial claims.

Leaving the territorial question out of consideration was an essential precondition for the conclusion of the treaty. Only at a time when but a few economically insignificant coal and ore deposits had been discovered in

Antarctica was such a solution possible: Since the territorial question was left out of consideration, the question regarding ownership of the natural resources in that area remained unanswered. But once the exploitation of natural resources in the area covered by the treaty is within the range of possibility, the above-mentioned compromise loses its factual foundation.[16] The surest way of defusing the territorial time bomb prior to a revisory conference would be to try to contractually separate control over the natural resources from territorial sovereignty. Such a procedure would leave the territorial question as such in abeyance,[17] while subjecting the exploitation of the natural resources in the area covered by the treaty to regulation by special international agreements.

The Federal Republic does not lay claim to any Antarctic territory of its own such as would be available in the hitherto unoccupied, but relatively inaccessible region between 90° and 150° west latitude, nor did the German Empire preceding the Federal Republic raise any such claim. What is presently important, however, is the question what position the Federal Republic takes in regard to the territorial claims raised. A progressive partitioning of the Antarctic cake into national pieces--resulting from the recognition of territorial claims--would lead to a "colonialism over penguins" unwelcome to any state--aside from the fortunate owners of Antarctic territory--interested in free research and cooperation on research projects. It could even be argued that the territorial question offers the Federal Republic an opportunity to pursue an independent, decidedly future-oriented policy. In contrast to the Antarctic great powers, the United States and the Soviet Union--which likewise have so far repudiated the territorial claims, but which have reserved to themselves the right of later recognition, along with assertion of their own claims--, the Federal Republic, in pursuing such a course, would have to forgo the possibility of laying claim to a territory of its own at a later date and at the same time unequivocally refuse to recognize any national territory. Such a position on the part of the Federal Republic would be internationally credible; moreover, it would be quite advantageous, since in the event of a future corroboration of the territorial claims it could juridically not be held against the Federal Republic.

However, an independent policy regarding Antarctica on the part of the Federal Republic would necessitate a certain degree of coordination with its EC partners, above all France and Great Britain, for the European communities, too, will at some point have to deal with the economic exploitation of the Antarctic resources. Aside from the Federal Republic, the Antarctica Treaty includes the EC states Belgium, France and Great Britain as consulting members and Denmark and the Netherlands as ordinary members. At present, the EEC Treaty does not in any way bear application to Antarctica.

The second great challenge to the Antarctica Treaty lies in the establishment of a system of just international distribution of the natural resources of this continent and of the seas surrounding it. The demand of the developing countries for an adequate share of the Antarctic resources, especially

of the vital protein, is undoubtedly legitimate. One reason why it cannot be offhand rejected is the fact that large krill swarms are occasionally encountered north of the area covered by the treaty.[19] Politically, the demand is part of the continuing efforts toward the establishment of a new world economic system. To accommodate these efforts to the existing Antarctic Treaty system the consulting members will in the coming decade need considerable political foresight, diplomatic skill, and imagination in regard to the application of international law.

Basically, at the present developmental stage of global conditions, one must proceed from the assumption that control over an unpopulated continent can be justified only in the sense of trusteeship for the benefit of all of mankind. However, the problem revolves around the question by whom and according to what rules this trusteeship (taken in a nontechnical sense) is to be exercised. At first glance, it appears that one could apply to Antarctica the "common heritage" principle developed in regard to the ocean floor and entrust the United Nations or one of its special organizations with the administration of this continent.[20] But aside from the practical and political difficulties that an application of this principle to the Antarctic resources would entail--difficulties that were all too apparent at the United Nations' Third Law-of-the-Sea Conference, which tried to work out international regulations governing access to the ocean floor--, there are three complementary objections pertaining to international law that can be raised against an analogous treatment of Antarctica and the deep sea: Firstly, they differ greatly, for Antarctica--being a landmass--can in principle be settled, even though at present the possibilities concerning actual colonization are for climatic reasons still limited. Secondly, Antarctica has already been given an effective treaty system which for 20 years has maintained peace on this inhospitable continent, protected its environment and made possible effective international cooperation on scientific projects. This treaty system established for all consulting members legal positions[21] which merit protection and which in contrast to the territorial claims are not dependent in regard to their validity on the recognition by third states. Thirdly, in the interest of the progress of all of mankind, Antarctica must also in the future remain first and foremost an object of scientific research. As compared to the exploitation of the deep sea, the economic utilization of Antarctica must to a much greater extent be subordinated to environmental protection requirements.

Preferable to the application of the "common heritage" principle would be an arrangement under which Antarctica would be held in trust by the most interested states active there, if it can be guaranteed that this circle can at any time be expanded through the accession of new states. This solution has the distinction of preserving the basic elements of the well-tried Antarctic Treaty system. The idea of trusteeship has already been outlined in the Preamble of the Antarctica Treaty, in which the signatories emphasize that the Antarctic peace and the freedom of research serve the interests and the progress of all of mankind. This idea has also been reaffirmed in the consulting members' recommendations.[22] Naturally, this means that the

consulting members can legitimize their special position in Antarctica only as long as their decisions and acts take into consideration the interests of the developing countries as well. In concrete terms, this entails the obligation not to squander the available resources, but to make economical use of them and to let the poorest states of the Third World share in the yield.

The year 1991 is as it were the point of crystallization of the above-mentioned challenges to the Antarctica Treaty, since according to Article XII this is the earliest date at which a consulting member can request the convocation of a revisory conference. If the resolutions adopted by a revisory conference are not ratified within 2 years by all of the consulting members--a rather short period in view of the parliamentary procedures of some of the member states--, any signatory state is free to secede at any time from the Antarctica Treaty and after another 2 years to pursue its Antarctic policy unemcumbered by any treaty obligations. Moreover, the signatory states are of course at liberty jointly to revise, amend or even abrogate the treaty. In practice, however, this is a lesser risk, as against a split of the treaty system after a revisory conference.

Naturally, a split or a definitive abrogation of the treaty system would lead to consequences in regard to the status of Antarctica. Politically, the termination of the special legitimacy of the existing treaty system would result in a vacuum, which would probably be filled via a potentially violent enforcement of the existing territorial claims, if the United Nations are not prepared to assume exclusive jurisdiction over this continent. As regards the juridical aspects, however, there would be no vacuum, since in the event of nonapplication of the treaty the regulations of the prevailing law of nations are applicable.[23] According to these regulations, scientific stations and installations in Antarctica are protected by international law and would not be subject to the sovereign authority of a state, even if that state asserted--irrespective of the Antarctica Treaty--a territorial claim including the site of the research station.

Domestic Measures

The Federal Republic's accession to the Antarctica Treaty and its admission to the "club" of Antarctic powers notwithstanding, the Federal Republic and its parliament can no longer leave the "continent of scientists" to the scientists alone. For even though the treaty was through the Law of Consent of 22 December 1978 incorporated into Federal law, several legislative and administrative problems have yet to be settled.

Of great importance is the acceptance of the 118 recommendations adopted at the last 9 consultative meetings.[24] In this respect, the Federal Government pointed out in its memorandum concerning the treaty that it would examine whether it could recognize as binding the recommendations adopted so far and that each case would be considered separately.[25] From a strictly legalistic point of view, the position taken by the Federal Government is not at variance with the prevailing law of nations, for not even if they are approved

by the governments of all consulting members will the recommendations be incorporated into the treaty, and a state acceding to the treaty is thus not legally obligated to accept the recommendations. But the Federal Government's position ignores an (as yet inoperative) recommendation by the states' representatives to the governments of the consulting members, a recommendation asking them to urge the acceding states to approve the recommendations already adopted.[26] Moreover, according to an explanatory statement by the consulting members,[27] the binding recommendations are measures designed to promote the principles and objectives of the treaty; they are an integral part of the total structure of the cooperative system established by the treaty and thus represent authoritative interpretations of those obligations, to the observance of which the Federal Republic--by acceding to the treaty--has in any case committed itself. Through its dilatory attitude, the Federal Government will not gain any more latitude, for in the individual case nonobservance of these recommendations would represent a contravention of the meaning and purpose of the Antarctica Treaty. Consequently, the Federal Government would be well advised shortly to accept the recommendations in force, as far as they have not been technically superseded.

An acceptance of the recommendations by the Federal Republic entails first of all an interstate obligation and does not in any way affect domestic law. In fact, a large number of the recommendations can be implemented without any additional domestic measures. However, a number of especially important recommendations--including above all several recommendations concerning Antarctic tourism that have already come into effect[28]--require the Federal Government to take domestic measures as well. These measures include the notification of other signatory states in regard to nonscientific Antarctic expeditions launched in the Federal Republic and the formulation of instructions for the promoters of tourist expeditions. Here one should also mention the "Concerted Measures Concerning the Preservation of the Antarctic Fauna and Flora"--which were adopted in 1961 in the form of a recommendation--and the pertinent supplementary recommendations.[29] Among other things, these recommendations contain extremely detailed regulations concerning human activity in Antarctica and the establishment of wild-life preserves. However, the Concerted Measures have not yet come into effect, since due to constitutional problems some of the consulting members have not yet accepted them or have accepted them only as provisional guidelines. The recent recommendations concerning the economic exploitation of Antarctica and the effect of human activity on the treaty area likewise require the governments of the consulting members increasingly to concentrate on domestic measures, e.g. to study how the projects undertaken by their citizens affect the respective Antarctic ecosystems.[30] In order to be able to establish these recommendations by decree, the Federal Government needs a legal basis. However, the Law of Consent concerning the Antarctica Treaty does not include such authorization; consequently, the Federal Government is presently not in a position to meet the obligations ensuing from these recommendations. It will be necessary, however, to establish a legal basis for the implementing regulations required.

The above representations were meant to show that the problems concerning an Antarctic policy are intrinsically multidisciplinary. Aside from scientific knowledge, their solution largely requires the expertise of economists and international jurists, in particular in the field of maritime economics which in the Federal Republic is as yet relatively underdeveloped. Thus, in terms of scientific policy, one could consider collecting in a central depository in the Federal Republic all pertinent domestic and foreign articles on the Antarctic problem and systematically promoting research in these fields. For technical reasons, it would be reasonable to combine the study of the legal, economic and political problems concerning the polar regions with corresponding studies concerning the high seas, the deep sea and outer space including the celestial bodies in a research program focusing on special aspects of the so-called extraterritorial spaces.

FOOTNOTES

1. For the text of the treaty and the official German translation, see Bundesgesetzblatt (BGBl) [Federal Legal Gazette], Part 2, 1978, p 1518.

2. In regard to the background and content of the treaty, see
John Hanessian, "The Antarctica Treaty of 1959. A Potential Model for the Settlement of Current International Problems," EUROPA-ARCHIV, No 12, 1960, pp 371 ff.
Ingo von Muench, "Problems Concerning Antarctica in International Law," ARCHIV DES VOELKERRECHTS, Vol 7, 1958/59, p 225.
Gundolf Fahl, "Arms Restriction in International Law," LOOSE-LEAF COMMENTARY, Berlin, 1975 ff, Section 1, p 12.
Stephan Freiherr von Welck, "The Federal Republic on Its Way to Membership in the Antarctic Club," VEREINTE NATIONEN, No 2, Apr 79, pp 46 ff.

3. Between 1873 and 1939, eight German Antarctic expeditions were undertaken. The Federal Republic launched expeditions in 1975/76 and 1977/78. For a survey, see
"Debates of the German Bundestag [Lower House]," Document 8/1824, 24 May 78, p 16.

4. The Federal Republic had signed the treaty as early as 19 November 1974. The parliament gave its consent through the Law of Consent of 22 December 1978 (BGBl. 1978, Part 2, p 1517). The Federal Republic became a treaty member on 5 February 1979 upon submission of the declaration of accession with the American Government. See
BULLETIN, Presse- und Informationsamt der Bundesregierung [Press and Information Office of the Federal Government], No 19, 13 Feb 79, p 171.

5. The following states acceded to the treaty as ordinary members: Poland (1961), Czechoslocakia (1962), Denmark (1965), the Netherlands (1967), Romania (1971), the GDR (1974), Brazil (1975).

6. As a temporary consulting member, the Federal Republic--upon termination of its research activity in Antarctica--would again step down to the circle of ordinary treaty members, whereas the 12 original signatory states--Argentina, Australia, Belgium, Chile, France, Great Britain, Japan, New Zealand, Norway, South Africa, the Soviet Union and the United States--permanently keep their status as consulting members, even if they are no longer active in Antarctic research. Poland became a consulting member in July 1977, after it had established a research station in the area covered by the treaty in the spring of 1977.

7. For the current fiscal year, an amount of DM 23.5 million has been appropriated; see
Budgetary Law, 1979, Itemized Plan No 30.
"Debates of the German Bundestag," Document 8/2150, 8 Sep 78.
All in all, the cost of the construction of the station and the research vessel is estimated at DM 100 million, and day-to-day maintenance at DM 30 million per year. In the competition concerning the site of the polar institute, bids have been submitted by Bremen-Bremerhaven, Hamburg, Kiel and Muenster. The Federal Science Council proposed Kiel.

8. Preamble, Articles I, V, VII. In this connection, see
Jost Delbrueck, "The Establishment of Denuclearized Zones Outside Central Europe," in: "Abschreckung und Entspannung" [Deterrence and Detente], Veroeffentlichungen des Instituts fuer Internationales Recht an der Universitaet Kiel [Publications of the Institute for International Law at Kiel University], No 76, Berlin, 1977, pp 683, 699 ff.

9. Preamble, Articles II, III, IX.

10. See F. M. Auburn, "Offshore and Gas in Antarctica," GERMAN YEARBOOK OF INTERNATIONAL LAW, Vol 20, 1977, p 139.
Rainer Lagoni, "Antarctica's Mineral Resources in International Law," ZEITSCHRIFT FUER AUSLAENDISCHES OEFFFNTLICHES RECHT UND VOELKERRECHT, Vol 39, 1979, p 1.
Documents and comments by experts in
"Exploitation of Antarctic Resources," Hearing Before the Subcommittee on Arms Control, Oceans, and International Environment of the Committee on Foreign Relations, United States Senate, Ninety-Fifth Congress, February 6, 1978, Washington, 1978, pp 109-145.

11. Since no Federal citizens engage in commercial whaling or sealing, the Federal Republic did not accede to either to the International Convention for the Regulation of Whaling of 1946 or to the Convention for the Conservation of Antarctic Sealing of 1972.

12. Sources:
Jahresbericht ueber die Deutsche Fischwirtschaft 1976/77 [Annual Report on the German Fishing Industry 1976/77], Berlin, 1977.

FAO, Yearbook of Fisheries Statistics 1976 (Catches and Landings), Vol 42, Rome, 1977.
Inigo Everson, "The Living Resources of the Southern Ocean," Rome, 1977 (FAO-Rep. GLO/SO/77/1).

13. See G. Hempel, "Biological Problems in Regard to the Fishing in Marine Ecosystems," NATURWISSENSCHAFTERN, No 64, Hamburg, 1977, p 206.
"Earthscan Press Briefing Document No. 5," The Future of Antarctica, London, July 1977, p 23.

14. See the United States Draft Convention for the Conservation of Antarctic Marine Living Resources, in: "Exploitation of Antarctic Resources," op. cit. (footnote 10), p 97.

15. See Renate Platzoeder, "Politische Konzeptionen zur Neuordnung des Meeresvoelkerrechts" [Political Conceptions Concerning the Revision of the International Law of the Sea], Ebenhausen, 1976, pp 155 ff.
Dieter Schenk, "Kontiguitaet als Erwerbstitel im Voelkerrecht" [Contiguity as Title Deed in International Law], Ebelsbach, 1978, pp 18 ff.
Schenk probably attributes too much importance to the role of contiguity in Antarctica (p 61).

16. From this basic change in circumstances, the respective land-owning states derive no special right of termination in the sense of Article 62 of the Vienna Treaty Law Convention, since the change does not fundamentally affect the treaty obligations still to be met and since it must be assumed that the contracting parties wanted to rule out any kind of termination before the end of the restrictive period stipulated in Article XII, Paragraph 2 of the Antarctica Treaty.

17. In regard to particulars of possible solutions, see Lagoni, op. cit. (footnote 10), pp 27 ff.
In international usage, there are various instances of a contractual separation of sovereign control over the natural resources from territorial sovereignty, especially in cases in which the question of territorial sovereignty is unresolved or contested. In this regard, see Rainer Lagoni, "Oil and Gas Deposits Across National Frontiers," AMERICAN JOURNAL OF INTERNATIONAL LAW, Vol 73, 1979, pp 215 ff.

18. The government of the German Reich on 23 January 1939 rejected the Norwegian declaration of 14 January 1939, which declared large parts of Neu-Schwabenland [New Swabia] that had been discovered on 1938/39 by a German Antarctic expedition Norwegian territory. In 1952, the Federal Government merely reserved to itself the right--ensuing from the act of discovery--of the geographical christening of Neu-Schwabenland; see Announcement of 12 July 1952, BUNDESANZEIGER, No 149, 5 Aug 52; see the memorandum on the treaty in "Debates of the German Bundestag," Document 8/1824, 24 May 78, p 17.

19. According to Article VI, the Antarctica Treaty covers the area south of 60° south latitude, whereas geographically Antarctica is limited by the convergence, a line changing according to the seasons, at which the colder, mineral-rich water of the Antarctic seas is pushed under the warmer water of the South Atlantic or South Pacific. Parts of this line are at 50° south latitude. The principal krill-fishing grounds are in the Scotia Sea outside the area covered by the treaty.

20. In regard to the so-called "common heritage" principle, see in place of many other studies
Wolfgang Graf Vitzthum, "The Efforts Toward Establishment of Regulations Governing Access to the Deep-Sea Floor," ZEITSCHRIFT FUER AUSLAENDISCHES OEFFENTLICHES RECHT UND VOELKERRECHT, Vol 38, 1978, p 745.

21. This was already pointed out by E. Guyer in his Hague Lectures; see "The Antarctic System," RECUEIL DES COURS, Vol 139, 1973 II, pp 149, 224.

22. Recommendations IX-1, Paragraph 4; VIII-13, Paragraph 1.

23. Theoretically, there is the possibility that some of the treaty principles have by that time become common law and thus continue to be effective irrespective of the treaty. This would apply above all to those principles which refer to the status of this continent in general and which are not concerned with special reciprocal rights and obligations of the contracting parties (such as the right of inspection or the obligation to cooperate on scientific projects): Demilitarization, the prohibition of nuclear tests and of the removal of radioactive waste and the freedom of scientific research in all of Antarctica.

24. The recommendations of the nine consultative meetings are reprinted in "Debates of the German Bundestag," Document 8/1824, 24 May 78, p 20.

25. Memorandum on the treaty, op. cit. (footnote 18), p 18.

26. Recommendations III-VII. The United States has not yet accepted this recommendation [sic].

27. Reprinted in "Debates of the German Bundestag," Document 8/1824, 24 May 78, p 61.

28. Recommendations IV-27, VI-7, VI-11; recommendation VIII-9 (not in force).

29. Recommendations III-VIII, supplemented by recommendation VIII-5, and recommendation IV-20.

30. Recommendations VIII-13, VIII-14, IX-5. An example of a test of the effects of human activity on the Antarctic environment is presented in

the Final Environmental Impact Statement for a Possible Regime for the Conservation of Antarctic Living Marine Resources, which was published by the U.S. Department of State in June 1978.

8760
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COUNTRY SECTION SPAIN

ARMS INDUSTRY BUILDS ARMORED PERSONNEL CARRIER

Madrid DEFENSA in Spanish Jun 79 pp 33-39

[Article by Mariano Aguilar Olivencia: "The Spanish Pegaso BMR-600"]

[Text] At the beginning of 1979, the ENASA [National Truck Enterprise Incorporated) plant, in Valladolid, started mass production of the new Spanish Wheeled Armored vehicles, 6 X 6, of the BMR [Wheeled Medium Armored Vehicle] as the result of adoption, by the Spanish Army staff, of the basic BMR-600-PP, personnel carrier version, and of its derivatives: command, mortar carrier (PM), missile launcher, cargo, ambulance and VEC [Cavalry Scout Vehicle].

This decision by the Spanish Army results from experiments and tests, with excellent tactical and technical results, of a group of various prototype vehicles, for a year and a half, and it confirms the confidence placed in this project that was started 7 years ago.

In fact, in accordance with its tactical-operational conceptions, employment doctrine and in view of the vehicles in service, from an analysis of the functions and characteristics of this type of vehicle, the Army was faced with the need for having an amphibious medium armored vehicle for transportation and, possibly, combat by the infantry squad.

With these premises the technical and tactical proposals for its specialized equipment, the existence or nonexistence, in Spain, of the technologies involved, industrial capability and geographical location, the problem was focused on the following requirements:

Need for building, in Spain, a "family" of wheeled armored vehicles derived from a basic personnel carrier version that would cover the Army's requirements in the next 10 to 20 years.

Specification of the basic vehicle for the organic infantry squad, with the primary mission of transportation up to and through the combat zone and capability of possibly participating in combat in support of the platoon.

Formation of a military team for analyzing, evaluating and selecting the basic characteristics for the PP [Personnel Carrier] vehicle, in an initial phase, in order, later, to double as a military technical equipment design team and as a tactical-technical committee for following up and evaluating the product.

Selection of the 6 X 6 version as the one most suitable, because an 8 X 8 family would be an excessive solution for what was sought and a 4 X 4 vehicle would not meet certain specifications of mobility or of evolution by certain derivatives.

Selection of the Spanish company in the automobile branch that might have a satisfactory research and development department [R & D] and that might master modern technologies pertaining to heavy wheeled vehicles.

Selection and formation of a joint technical design team exclusively for that purpose and located in the plant selected for carrying out the project.

Establishment of an armored vehicle development technical committee that, participating in other R & D programs, would have the duty of supervising the maximum employment of national components, studies and reports, leading to promoting nationalization and cooperation agreements on imported components, and that would be responsible for the quality and support of the progressive industrialization of the various members of the future family.

Prototype

Selection of the industry primarily responsible for production fell on the National Truck Enterprise Incorporated (ENASA), known internationally by its line of Pegaso trucks and engines and that has been supplying the Army for years with 3045 and 3050 tactical trucks, in which the joint technical design team was also located. Specification of the design began in 1972, for which there was the advantage, in spite of starting late in comparison with other countries, of the existence of acceptable, firm studies in other nations.

The design materialized in January 1974 in which year, after a display of speed in this kind of experiment, the prototype of the first Spanish amphibious armored vehicle mounted on wheels was in a position to be tested. Its characteristics were the ones listed [at the end of this article].

The prototype, Number V-001, was subjected to a broad, severe schedule of highway, cross-country and water-crossing tests with good results, providing acceptable performances, although it proved to be excessively heavy, wide, long and roomy inside for the requirements of the Army, which was seeking a more versatile vehicle with less volume to present to a possible enemy.

In view of this situation, the design was reworked, under those requirements, and, after 3 more years of work by the joint technical design team (Army-ENASA), the basic second generation BMR-600 vehicle was born. The mass production now started belongs to this generation.

Basic BMR-600 Vehicle

In 1977, this new vehicle was completed with characteristics more adjusted to the requirements of the infantry that is going to use it. Its prototype was subjected for a year and a half and over 3,000 kilometers to severe tests on terrains and under conditions as varied as the heights of the Sierra Nevada, with a climb of Veleta Peak, the sandy desert areas of Almeria and the hard, broken terrain close to the Buendia reservoir, in which the amphibious trials were performed. These trials were passed with excellent performance and technical and tactical results, with the tactical tests performed by various military units.

The BMR-600, which is reminiscent of the Swiss MOWAG Pinranha and the French SAVIEM VAB [Advance Armored Vehicle], consists of a welded hull made of prestressed Al-Zn 4.5-Mg 1 light aluminum alloy plates in the shape of a parallelepiped with a watertight self-supporting structure with good slope of the walls.

The driver's seat is in the forward position to the left, slightly forward of the front of the vehicle, with good frontal visibility by means of a multilayer glass windshield, protected by a metal plate that can be lowered and that is equipped with a peephole and two small side windows, supplemented by two large rearview mirrors. There is a hatch on the roof that makes it possible to drive by looking out through it. Its cover pivots toward the right, held by a bolt located on the engine access door.

The vehicle commander is located behind the driver. He has a single-place turret, made in Spain under a MOWAG license. It is equipped with two wide-angle periscopes for observation and firing.

The after two-thirds of the BMR-600 make up the personnel transportation compartment, with a capacity for 11 men with their combat equipment. There are two folding continuous seats, back against the vehicle walls. This compartment is connected with the driving chamber through the command post by a small passageway. For quick entrance and exit of the riflemen, the Pegaso BMR-600 has an large door aft capable of being lowered, operated hydraulically with a control at the driver's post and including a small emergency swinging door, making up a whole very similar to the M-113 TOA's.

Two large rectangular openings have been made in the roof in a transverse direction with their pertinent hinged covers, opening in the direction of travel. Along the hull, it has four swivels with their peepholes for using the squad's CETME assault rifles and similar rifles, arranged two on the right side wall, one in the after door, in the swinging door, and another on the left side, because the fuel tank is located there.

The engine ventilation gratings, the air filter intake, the fuel tank filler opening and the antenna support are on the roof.

Mobility

Mobility is an essential factor in infantry transportation and combat vehicles, because it is closely tied to the essential characteristic of their employment to transfer, support and fight along with the riflemen and the tanks and it is, therefore, one of the first factors to be taken into account in any vehicle of this type.

Precisely because good mobility on any terrain is regarded as necessary for covering the missions assigned to this vehicle and because the concept of protection is fundamental at the same time, a powerful engine, a flexible, progressive transmission, together with a suspension with great capability for vertical displacement, an assisted and very smooth steering, which has resulted in a high ratio of power to weight, brilliant driving and large action radius have been combined in the BMR-600.

The BMR-600 incorporates the Pegaso 9157/8 engine, four-stroke diesel, with direct vertical injection, supercharged by a turbocompressor, six cylinders in line with a maximum power of 306 horsepower at 2,200 RPM and a maximum torque of 110 m kgf at 1,500 RPM. Cylinder capacity is 11,945 cc, water-cooled by means of circulation forced by centrifugal pump. Weight is 1,100 kilograms.

This engine is the military version of ENASA's commercial model 9,157, used in a large number of large-tonnage trucks and, therefore, tested more than enough and well-known, with a good stock of spare parts and the possibility of easy, fast replacement in case of need.

It is mounted in a watertight compartment isolated from the rest of the vehicle by a fire wall, located in the center to the right of the driver with an access door on the sloping front of the BMR-600 and inspection holes imbedded and protected in the bottom and interior of the armored machine.

The transmission consists of a hydraulic torque converter coupled to the engine, followed by an HP-500 Zahnradfabrik Friedrichshafen (ZF) automatic gearshift box with six speeds forward, reverse and hydraulic retarder, a transfer box for power output after shifting, transmission with center distributing differential with three self-blocking differentials by means of transmission shafts with universal joints. Shifting is operated by energized automatic control or by a switch located under the steering wheel. The self-blocking differentials, controlled pneumatically by the driver, prevent slippage of the wheels in sandy terrain or ground with little adherence. They are the same as the ones incorporated in the Pegaso 3045 and 3050 military trucks.

This drive assembly provides the BMR-600 with a maximum highway speed of 100 kilometers an hour, with an excellent cruising speed of 90 kilometers

an hour and a high ratio of power to weight on the order of 22 horsepower per metric ton, which, together with the engine thrust and total reduction, enables it to run on any terrain and to climb longitudinal slopes up to a theoretical 70 percent. At the same time, the low specific consumption of the engine amounting only to 160 grams per horsepower-hour enables it to achieve high autonomy limited to 900 kilometers with a consumption of .355 liter per kilometer. The fuel tank has a 320-liter capacity.

It has an integral hydraulically servoassisted Beniberica steering acting on the front and rear wheels providing a small turning radius of only 7.5 meters. This makes greater width possible in the lower part of the hull and, therefore, does not decrease flotability.

An important factor for good mobility is suspension and the BMR-600 incorporates an oleopneumatic syspension system, with independent wheels, by means of a lower triangle and oleopneumatic cylinders in a MacPherson configuration, making possible a 300-millimeter vertical displacement in each wheel, giving the vehicle its excellent "all terrain" capabilities. This suspension is capable of taking various heights, keeping the vehicle in four basic positions:

Maximum height to overcome especially difficult obstacles.

"All terrain" height for accidented zones, cutup and stony terrain.

Highway travel height enabling it to attain high speeds safely.

Minimum height for embarcation and concealment from the enemy.

Another characteristic of the suspension is the one making it possible to incline the vehicle longitudinally and transversally to facilitate entering and leaving waterways, with entrance and exit angles of 50 and 45 degrees, respectively, and to run on lateral slopes, in addition to using the terrain as a platform for heavy weapons. It also enables the vehicle to run with two wheels out of commission, because it suffices to raise the disabled wheels and to continue on the way with the four remaining ones.

The main brakes are disk brakes on the six wheels, operated hydraulically by means of compressed air MGM chambers to obtain hydraulic pressure, with an independent dual circuit for each axle. It has emergency brakes, because the MGM chambers operate automatically when the compressed air pressure in the tanks drops. The pneumatic circuit makes it possible to use the MGM chambers as a parking brake, but, in order to prevent a possible loss of effectiveness through prolonged service, it has a disk brake in the transmission, operated mechanically by the driver.

There are six 9.5 X 20 stamped disk wheels, with Michelin 13.00 X 20 XL Pilote low-pressure, puncture-proof tires enabling it to run easily on soft, sandy terrain.

The Pegaso BMR-600 is amphibious without any preparation. For water-crossing, it has two directional hydrojets on the lower after part, on both sides of the door. Both can be operated independently from the driver's post. The blades in each hydrojet are driven by a hydraulic motor that receives total power from the armored vehicle's engine through a pump common to both, coupled to the crankshaft outlet. It attains a speed of 10 kilometers an hour when sailing in calm water, enabling it to cross streams with rapid water. It can also sail by driving with the wheels at a maximum speed of 4.5 kilometers an hour. It mounts a breakwater plate with a small porthole on the bow.

The combination of foregoing components provides the BMR-600 with excellent mobility, with brilliant, smooth driving, with less fatigue for the driver. The fact that all the wheels on each side follow the same track provides additional safety in passing through mined zones and greater facility in maneuvering in small spaces (woods, narrow streets, and so on).

Protection

Protection of the BMR-600 lies essentially in a combination of armor with the vehicle's general silhouette and its mobility.

As has been pointed out, the chief passive component of protection, that is to say its armor, is achieved with Al-Zn 4.5 - Mg1 light aluminum alloy plates, with different thicknesses and designed slope angles enabling it to resist direct hits by light infantry arms and shrapnel and indirect hits by artillery shells.

Selection of this kind of armor was made on the basis of achieving a decrease in weight with the same protection, the possibility of producing carrier hulls with greater rigidity with no need for interior frames or reinforcements, owing to the greater thickness of the walls and the use of a construction method of fitting plates on each other by their milled edges, a drastic decrease in the vehicle's magnetic signature, preventing the risk of magnetic mines and explosives, ease in obtaining spare parts, because of wide civilian use and allowance of explosive welding, with the possibilty of making urgent repairs in the field.

The design of the bottom of the hull deserves special mention. It was designed and produced with a completely flat surface, with imbedded inspection holes and plugs. It consists of two parallel plates, with an intermediate air chamber, thus increasing the rigidity and protection of the belly against explosions of mines or similar devices.

This design makes it possible to house the three differential sets and steering systems inside the hull, resulting in greater protection for these mechanical components, not only against explosives and projectiles, but also against rocks and other similar obstacles, as was displayed in the evolutions of the BMR-600 on dry, stony terrain. The concept of "armored carrier with everything inside" instead of "armored truck with everything outside."

At the same time, this smooth undersurface facilitates self-recovery of the armored vehicle, while traveling over extremely soft terrain, when its wheels sink, resting on the bottom. The ease of recovery of a BMR vehicle has been verified under these conditions by making it slide on its belly by means of a winch until the wheels are supported on firm ground.

The capability of covering the peepholes, periscopes and windshield to prevent light from passing out from inside the armored vehicle and being detected in the outside darkness. Another factor, in this field of protection, is its low noise index, resulting in its being practically acoustically undetectable from several dozen meters and in less fatigue for the soldiers, owing to the careful study and selection of the muffler and exhaust system, although, because it is on the right exterior side of the vehicles, without any protection whatsoever, it is quite vulnerable.

The BMR-600 can operate in a nuclear environment, as well as under biological and chemical contamination, because its perfect water- and airtightness is coupled with having, optionally, ABC [Atomic, Biological, Chemical] protection equipment that causes an airstream to pass through at the rate of 3 cubic meters a minute, by means of a system of two filters. The air is kept, in the interior, at a slight excess pressure of 30 millimeters of water column. In addition, the smooth, clean configuration of the outside walls of the BMR-600 facilitates resistance to pressure waves from nuclear explosions at the same time as it makes better decontamination possible.

Finally, it has a fixed interior firefighting system on the basis of CO_2 foam with outlet nozzles in the engine chamber and actuation control at the driver's post.

Fire Power

As has already been pointed out, when the Army was faced with the need for producing an armored family, it decided on the basic vehicles for this family with the mission of transporting an organic infantry squad to and through the combat zone, with the capability of participating in possible actions of self-defense or of support of the squad in deployment.

Consequently, the BMR-600-PP has been equipped with a MOWAG single-place turret, produced in Spain, for the squad leader and armed with a standardized MG-3S machinegun, made in Oviedo, with aiming and firing from inside, both in bearing and elevation, with the turret closed.

This turret is mounted behind the driver, without any interference in the field of visibility of the man occupying it. For this purpose, it has two observation periscopes and a Leizt daytime aiming device synchronized with the weapon and with a vertical angle from -15° to +60°. Inside are the fire, elevation and bearing controls, both electrical and manual, as well as the belt ammunition loader with a 2,500-round capacity.

But the BMR-600 allows a great variety of armament, depending on the tasks assigned, ranging from light protective armament to 90-millimeter guns for support, by fire and combat, including missiles and automatic land and anti-aircraft guns.

Equipment

The BMR-600 is equipped with white-light headlights located inside the armored front, protected by a grille. It also has war lights and night driving lights, all standardized and of the NATO type. The electrical system, required for supplying the engine and other components and accessories, has a voltage of 24 volts, provided by two 140 ampere-hour batteries and a 2,200-watt alternator. All the cabling, of a special type, of the system is made and protected in accordance with NATO specifications, just like the electrical connectors and outlets.

It has two bailing pumps installed with a total discharge capacity of 201 a minute [as printed in source] and a divided system whose control is at the driver's post, installed optionally at the user's request.

In order to achieve its own recovery, to solve difficult situations and to perform other maneuvers, it is equipped with a hydraulic winch located on the right forward part and concealed inside the hull, with a speed variable up to 18 meters a minute and a maximum traction force of 6,000 kilograms.

A standardized support for tools is installed on the upper part of the left side. On the other hand, it does not have smokepot launching tubes.

Variants

A series of variants have been derived from this basic vehicle of the BMR family, forming members of it with different tasks and shapes. They all have the same mechanical components in common and a similar general construction.

BMR-600A-1. Equipped with openings protected by covers for firing from within, instead of swivels. The vehicle commander has a fixed turret provided with eight ENOSA daytime observation periscopes giving panoramic vision, and a circular cradle-mount for a 7.62-millimeter MG-3S machinegun, with exterior control. The turret is closed by a round cover pivoting to the right.

It has no hydrojets. Therefore, the after lateral part has the same shape as the intermediate wheel section and goes to the height of the bottom of the vehicle. Water-crossing is performed by means of the wheel drive at a speed of 4.5 kilometers an hour. It has no breakwater plate, ABC defense equipment or auxiliary winch.

It is provided as a carrier (PM) for 105 and 81-millimeter mortars with a special mounting inside, or for 120-millimeter mortars towed. Also as an armored ambulance with four litters and as a cargo vehicle.

BMR-600A-3. Squad support version, equipped with a TOUCAN-1 single-place turret, armed with a 20-millimeter automatic gun and a 7.62-millimeter machinegun, in addition to two smoke-launching tubes on each side. All these weapons can be fired from the inside for closed turret combat. It has six viewing periscopes and a daytime aiming sight.

This turret is located behind the vehicle commander's hatch, over the place for the first rectangular opening in the roof, which has been replaced by the opening for the turret and by a hatch parallel to the turret. The vehicle commander has only a hatch equipped with three observation periscopes. Laterally, he has observation and firing portholes, like the ones in the version described above.

This version has also been tested with the Oerlikon GBD-A05 turret with a 25-millimeter gun and with a turret with a 90-millimeter gun, with a maximum incorporated weight of 2,500 kilograms, the sailing limit, with an effective range of 1,200 meters with hollow charge projectiles. The result is a fire-support vehicle with capability of antitank action, retaining, moreover, mobility and amphibious features.

The low-altitude antiaircraft defense version, to be tested this year, has been turned out on this A-3 variant. It involves two armament possibilities; one, by mounting a CETME 20-12 Meroka gun and the other with a turret with a twin 20-millimeter mount.

BMR-625-VEC (Cavalry Scout Vehicle). This is the most interesting version of the three, because of its employment and general configuration conception, presenting considerable differences with regard to the rest of the members of the BMR family.

Development of the Wheeled Medium Armored Vehicle has resulted in providing the infantry branch with a transportation vehicle with excellent capabilities of participating in combat with need for disembarking the squad, except for attacking and cleaning up occupied positions. Nevertheless, the cavalry required a lighter and more powerfully armed vehicle for performing its own special missions, whose characteristics cover the special way in which this branch fights: reconnoiter and discover, provide security, exploitation of success and pursuit, as well as protect and cover retreat. These combat procedures find expression in actions of scouting and reconnaissance, security and combat, for which the VEC has been produced specifically.

The hull has been redesigned, eliminating, in front, the small driver's cab, which is moved over to a center position on the sloping plane, with a hatch provided with three driving periscopes.

The vehicle commander's hatch opens behind the driver and to the left. It has three peepholes on the left, one in the front and another on the right. The one on the right side has more limited visibility owing to the armament turret. This turret is mounted in the center, behind the driver. It is the

Oerlikon GBD-A05 model, armed with the Oerlikon KBA-B 25-millimeter automatic gun and a 7.62-millimeter machinegun.

The VEC engine is installed in the left after position with an exhaust outlet on the same side and access through a door on the after sloping plane, because, in this version, the hull slopes obliquely in a way very similar to the forward part of the vehicle.

This model has no rectangular hatches in the roof. They have been replaced with ENOSA hatches with peepholes, one on the roof, near the engine, with view to the right, and another on the after sloping part, thus its only five crew members are provided with total observation of the terrain in any direction.

Like the other versions, it is amphibious, driven by hydrojets. It has ABC defense and a traction winch.

Conclusion

With the production and placing in service of the Wheeled Medium Armored Vehicle a range of vehicles is obtained with wide employment capabilities and excellent characteristics, as the trials have demonstrated. They will make it possible to provide the mechanized units with a transportation and combat vehicle in line with the most modern ones in existence. It even has proved to be better than some of them.

The Spanish Army will shortly have complete units with BMR-600 vehicles, because the facilities of ENASA, which has another successful achievement to add to previous ones, will shortly be at a rate of 200 vehicles a year, in implementation of an initial Army-National Truck Enterprise contract for 500 units, continuing at an approximate rate of 100 BMR-600 vehicles a year, some of which it is reasonable to expect will definitely be exported.

As a first conclusion, there is the advisability of continuing to set up specific working teams with the incorporation of military technicians in the R & D structures of industries, for the purpose of repeating these successful achievements in other equally necessary and approachable defense matters.

Prototype Characteristics

Weight empty:	16,500 kilograms
Length:	6.9 meters
Width:	2.95 meters
Height:	2.6 meters
Ground clearance:	0.4 meter
Suspension:	Oleopneumatic, with independent wheels with a basic position
Wheels:	Disk, with Michelin 13 X 20 XL Pilote tires
Engine:	Pegaso diesel 9,156/8, turbocharged, 6 cylinders in line and directed injection, 353 HP at 2,200 rpm, located in center to left
Transmission:	Automatic gearbox with 6 speeds forward and reverse, with torque converter
Maximum speed:	110 kilometers an hour on highway, 8 kilometers an hour in water
Action radius:	600 kilometers
Longitudinal gradient:	80%
Lateral gradient:	30%
Vertical obstacle:	0.7 meter
Fording:	Amphibious, driven by hydrojets
Armor:	40/70 millimeters

Characteristics of the 6 X 6, Wheeled Medium Armored Vehicle, Personnel Carrier (BMR-600PP)

Employment:	Transportation of organic infantry squad
Builder:	National Truck Enterprise, Incorporated (ENASA), Pegaso
Year:	1977

Size and Weight

Length:	6.15 meters	Track:	2.08 meters
Width:	2.49 meters	Weight in combat:	11,500 kilograms
Height:	2.00 meters	Weight of engine:	1,100 kilograms
Ground clearance:	0.40 meter		

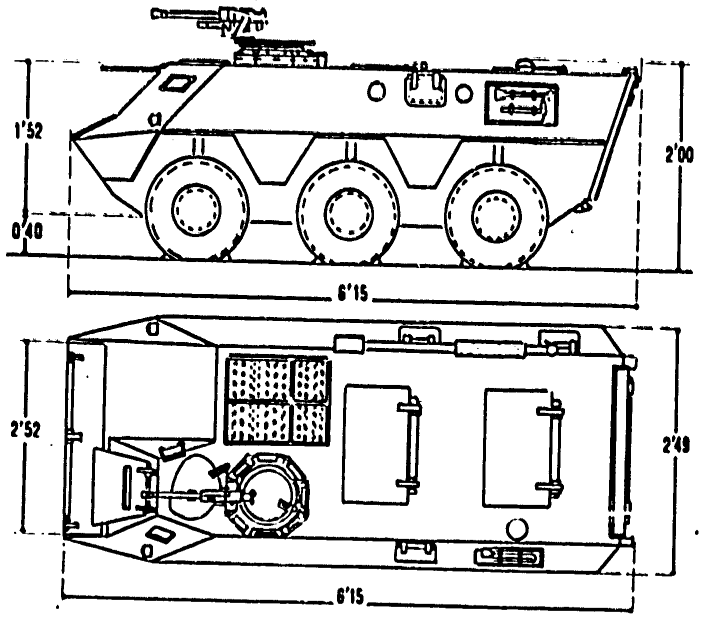
Mechanical Characteristics

Engine:	Pegaso 9157/8, 4-stroke diesel, 6 cylinders in in line, displacement 11,945 liters, direct injection, supercharged, 306 HP at 2,600 rpm, maximum torque 110 m kgf at 1,500 rpm, water-cooled, located left forward
Power/weight ratio:	22 HP/metric ton

Consumption:	0.355 liters/km; 160 grams per HP-hour
Transmission:	ZF automatic gearbox with torque converter and drive retarder, 6 speeds forward and one reverse; transfer box and central distributing differential; three self-blocking differentials operated pneumatically, with individual forced oil by pump
Suspension:	Oleopneumatic, independent wheels with oleopneumatic cylinders, adjustable in four basic positions
Running gear:	6 X 6, 9.5 X 20 disk wheels with Michelin 13 X 20 XL Pilote tires, with Hutchinson innertubes
Brakes:	Main brakes, disk on all six wheels, independent with dual circuit and double caliper [as printed in source]; deceleration 5 meters per sec^2; emergency brakes, with deceleration 2.5 meters per sec^2; parking brake, disk on the main transmission
Armament	
Main:	7.62-millimeter MG-3S machinegun in a MOWAG single-place turret, with firing from inside
Firing angle:	360° horizontal; from -15° to +60° vertical
Ammunition:	2,500 7.62-millimeter rounds
Secondary:	Capability of using individual armament through swivels
Performance	
Autonomy:	900 kilometers
Speed:	Maximum 100 kilometers an hour on highway, cruising speed 90 kilometers and hour; in water, with hydrojets, 10 kilometers an hour, with wheels, 4.5 kilometers an hour
Longitudinal gradient:	68%
Transverse gradient:	30%
Maximum trench:	1.2 meters
Vertical obstacle:	0.6 meter
Fording:	Amphibious, without preparation
Entrance angle:	50°
Exit angle:	45°
Turning radius:	7.5 meters
Payload:	2 metric tons
Maximum load (sailing limit)	2,5 metric tons
Usable volume:	11.5 cubic meters
Fuel:	320 liters diesel

Equipment

Aiming and viewing devices:	Leitz daytime aiming device; fixed observation periscopes for commander. 60-millimeter laminated glass window view finders; white light searchlights for driving
ABC defense:	Filter with capacity of 3 cubic meters a minute and slight excess pressure
Firefighting protection:	Fixed CO_2 system
Heating:	Optional
Bailing pump:	Two, capacity 20 liters a minute
Winch:	Hydraulic, speed variable up to 18 meters a minute and 6,000 kilograms of force
Crew:	Driver and 12 men with combat equipment



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CSO: 3110

COUNTRY SECTION SPAIN

ARTICLE DISCUSSES MILITARY OPTICAL INSTRUMENTS

Madrid DEFENSA in Spanish Jun 79 pp 53-55

[Article by Javier de Mazarrasa: "ENOSA: Spanish Optical Instruments for Defense"]

[Text] The complexity of modern warfare, the constantly greater effectiveness of collective or individual weapons placed in the service of armies, the use of the nuclear weapon and of huge amounts of vehicles, entail an extraordinary speed for actions, accompanied by total effectiveness in achieving the material and morale objectives of the operations undertaken, in countering enemy action and in reducing action times. All that requires perfect training of commands and troops and a quality of armament and its components that will guarantee that effectiveness.

Production

The present production of equipment for military application by ENOSA [National Optical Enterprise Incorporated] includes a wide range of components, both of its own design and produced under license, although, in this last-mentioned case, the degree of nationalization reaches 85 to 90 percent.

At present, ENOSA produces several models of high-quality binoculars (8 X 30 and 7 X 50) with or without telemetric plate for military use, sextants, artillery levels, aiming equipment, direction finders and fire computers for mortars and artillery pieces.

The "Bimador Sight" for the 40/40 millimeter antiaircraft gun with a magnification of 1 X, horizontal field of 600 m/km and vertical field of 300 m/km, is also produced by this plant, as well as sights for Oerlikon 20-millimeter guns and M-40AI 106-millimeter recoiless guns.

Other components are aiming sights for 60, 81, 105 and 120 millimeter mortars. An aiming device for mortars mounted on M-125 TOA's [expansion unknown] is under development. The characteristics of this equipment for curved firing weapons are magnification 2.7 X, diameter of exit pupil 5

millimeters, entrance pupil 19 millimeters, real field 10°, sight offset 90°, capability of tilting the telescope, goniometric range and drift motion and illumination of reticle for night firing, with the following size and weight: 260 X 110 X 110 and 2.16 kilograms.

The BP-3 Prismatic Aiming Sight for M-65 grenade launchers is also outstanding. Its characteristics are magnification 2.2 X, diameter of exit pupil 6.4 millimeters, real field 8° 30' and entrance pupil 58 millimeters. It is equipped with a protective glass for the objective, telescope case and reticle illumination accessory by means of a rheostat set with switch. It has been given an antireflecting coating to prevent revealing flashes. This equipment, which is exported to a good number of countries, has the following dimensions: 220 X 60 millimeters and 40 millimeters Ø, weighing 325 grams.

ENOSA manufactures all the optical instruments for the AMX-30 tank (see DEFENSA No 9), as well as periscopes and various devices for other armored vehicles, both combat and internal security, like the future carrier of the Meroka multiple antiaircraft weapon, the BMR-600 and its Civil Guard VEC [Cavalry Scout Vehicle] and 4 X 4 VBAD [expansion unknown] derivatives for which a turret whose optical equipment will be the responsibility of ENOSA is under study.

The ENOSA Telescopic Rear Sight for assault rifle is outstanding among its products. It may be described as one of the best in the world, because it was tested and approved in March 1976 by the Belgian Herstal National Factory (FN) in competition with seven other models from Carl Zeiss, A-Khales (Austria), OIP (Belgium), Tasco (Japan), Swarovski (Switzerland) and Hensoldt (Denmark). It was the only one that completed the tests satisfactorily and suffered no damage whatsoever, according to the certificate issued by FN. Its principal characteristics are magnification 4 X, diameter of exit pupil 5 millimeters, real field 4° 36', entrance pupil 74 millimeters, weight 385 grams and size 270 millimeters and 42 Ø.

For the purpose of modernizing the M-47 and M-48 tanks, ENOSA has provided visual and night firing equipment that increases the tank's capabilities with no need for sizable modifications to the vehicles. This equipment provides superior performance in observation, aiming and night driving, owing to a complete system of image intensifying passive sights, and in firing accuracy and speed by using a laser range finder. This equipment has a high degree of reliability and is of the modular type, resulting in easier maintenance. The system proposed by ENOSA includes a $CN_2$16 driving episcope making it possible to drive at 50-60 kilometers an hour on a moonless night, a $TJN_2$60 day and night aiming telescope with three optical paths with magnfications 1 X, 6 X and 5 X coupled to a TCV-29 laser range finder with a maximum range of 10 kilometers and usable from 300 to 5,000 meters, OB-44 night binoculars for the tank commander, a PH-14 xenon searchlight, a computer and a control console.

Likewise, and for the purpose of increasing their employment capabilities, making night battle action possible (impossible at present), ENOSA has set

up a program for modernizing the optical equipment of AML HE-60 and H-90 armored vehicles by means of installing a $CN_2 8$ driving periscope, a $TN_2 90$ night aiming telescope, a laser range finder and passive vision OB-44 binoculars.

In this way, ENOSA has been demonstrating a constant updating and consistent dedication, since the date of its establishment, to the Armed Forces and to research on new high-precision optical instruments.

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BRIEFS

ARMS EXPORTS--During 1978, Spain exported 2,462 metric tons of arms and ammunition, according to data published by the General Directorate of Customs. This amount implies a sharp advance, in comparison with the 1977 exports, which amounted to 1,683 metric tons. By way of comparison, it is stated that 1,748 metric tons were exported in 1976. With regard to value, there also is a sizable increase. In 1978, the value of these exports amounted to 3,296 million pesetas, while in 1977, they reached 2,260 million and a year before that, sales of arms and ammunition abroad amounted to 2,123 million pesetas. According to sources connected with foreign trade, these data published by Customs are only a percentage of the total arms exports carried out by Spain. [Text] [Madrid DEFENSA in Spanish Jun 79 p 8] 10042

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COUNTRY SECTION SWEDEN

PARTIES' ELECTION CAMPAIGN BUDGETS ANALYZED

Stockholm VECKANS AFFARER in Swedish 9 Aug 79 pp 11-13

[Article by Eva Thorn and Alf Norrman: "VECKANS AFFARER Surveys Election Capital; Right-Wingers Draw Away From Palme"]

[Text] The right-wing parties are increasing their economic lead over the socialist bloc in this year's electioneering. However, the backing the right-wingers get through the SAF's [Swedish Employers' Confederation] various campaigns comes to an end during the electioneering itself, even if the Swedish Industrialists' National Federation has a campaign in its hip-pocket. VECKANS AFFARER has made a survey of how the parties are running in the election spurt.

The five parties represented in the Riksdag have entered the infighting phase in the struggle for ministerial posts in the Chancellery in 1979. The distribution of money between the central party secretariats of the two blocs is relatively even. Approximately half of the slightly more than 32 million kronor in the central campaign funds of the five parties in the Riksdag is in the election budgets of the right-wingers and a similar amount in those of the "socialistic" parties (15 and 17.8 million kronor, respectively).

But the conservative election locomotive has considerably more "fuel" than that of the Social Democrats and the VPK [Left-Wing Communist Party] on the local and regional lines. Of the total of a bit more than 50 million kronor which, according to the central party secretariats' estimates, are contained in the local and regional election budgets, more than 60 percent, or 32.6 million kronor, is being handled by the conservative parties' local organizations while approximately 20 million kronor are being handled by the local organizations of the Social Democrats and the VPK together.

Eighty-five million kronor being shoveled into the election locomotives. The conservative locomotive has more coal to burn than the socialist one does before this year's race for the Government Cup. But that is only on the local level, in the county council and the municipalities, and it is the Center Party, above all, which, with a strongly decentralized election campaign, is feeding coal to the machine. The Moderates are "heating" with 4.8 million kronor centrally and 8.8 million kronor locally, the Liberal Party with 3.5 million kronor centrally and 6.5 million kronor on the local level, the Center Party with 6.7 million kronor centrally and 17.3 million kronor locally, the Social Democrats with 15.7 million kronor centrally and approximately 16 million kronor locally and the VPK with 2.1 million kronor centrally and 4 million kronor locally.

Above all, it is the Center Party's decentralized electioneering which is producing this dominance by the conservatives. That party is devoting three-quarters of its entire national budget to regional and local efforts, or 17.3 million out of a total of 24 million kronor, while the M [Moderate Coalition Party] and the FP [Liberal Party] are using approximately two-thirds locally and the Social Democrats approximately one-half.

However, where numbers are concerned, the conservatives cannot compete with the 350,000 Social Democratic campaign workers. The three conservative parties, taken together, only have one-sixth of all the campaign workers, or 67,000 people.

38 Million Kronor for Votes by Mail

But it is not just the political parties and other organizations which invest money in politics. Society has to bear the heaviest expenditures for the election. The government (the National Tax Department and the County Government Board) and municipalities pay an election bill for the year which amounts to a total of approximately 120 million kronor for the practical arrangement involved in holding the election. Out of the state's budget of 62 million kronor, a total of 38 million kronor covers the cost of voting by mail (ordinarily, one-fourth of all Swedish voters vote by mail).

Other, peripheral expenses are also involved, such as the expensive extra radio and TV programs. Added to this is the cost of all unpaid work during the election campaign. Actually, a rather large part of the money expended by the parties is also paid by society--through party subsidies from the government, the county councils and the municipalities. Under this heading, the five parties represented in the Riksdag collected 185 million kronor during the year. That is money which goes to the party treasuries for ongoing activities, and only a part of it is set aside for election campaigns. Out of the approximately 120 million kronor received by the central party secretariats in 1979 (60 million of which were received by the conservatives), "only" one-fourth was used in the central election budgets (that is, the 32 million kronor in the central campaign funds).

During the year, the Moderates got a total of 28.7 million kronor in subsidies from society (11 million kronor of which were received centrally from the government), the Liberal Party received 27.8 million kronor (9.5 million kronor of which were received centrally), the Center Party received 37.1 million kronor (17 million of which were received centrally), the Social Democrats received 80.8 million kronor (30 million of which were received centrally) and the VPK received 10.6 million kronor (5.2 million of which were received centrally). Over and above that, the parties, all together, get a little less than 5 million kronor for information for immigrants.

Out of the central election budget of 32 million kronor, the five parties represented in the Riksdag, all together, put the most money into advertisements--an amount of 10 million kronor. But the amounts of money are not

equally divided among the parties. Among other things, the parties do not have equal access to their own press facilities, and that, among other things, is what determines the weight of advertising in the election campaign. The Social Democrats expend the most (4 million kronor) and the Liberal Party the least (850,000 kronor), for they expend even less than the VPK (1 million kronor). Both the Moderates and the Center Party invest 2.5 million kronor.

For the Social Democrats, the Center Party and the Moderates, advertisements constitute the item for which the largest expenditures from the advertising budget are made, while the largest expenditures of the Liberal Party and the VPK are made for printed material, which represents a cost of slightly more than 8 million kronor for nearly 20 million election newspapers and general brochures and a similar number of other brochures and pieces of printed material for all the parties represented in the Riksdag.

Half as Many Posters

During this year's campaign, significantly fewer posters are being put up than in 1976. Put quite exactly, it is half as many, or 530,000 (compared with a bit more than a million in 1976). But as far as the cost of posters is concerned, the parties still had to come up with approximately the same amount of money as in 1976. It is also primarily the increased cost which brought about the reduction in the number of posters--even though other considerations were involved, too.

For instance, the Moderates took the initiative in trying to bring about an agreement to cut down the number of posters, jointly, during the campaign this year (the agreement never became a reality). "We do not believe that posters have a greater propaganda value than other means of disseminating propaganda," says chief of information Mats Johansson (M).

Allan Pettersson, party secretary of the Center Party, does not agree. "I believe that posters serve an important purpose in increasing interest in and commitment to the campaign before the election," he says.

In reality, everybody but the Liberal Party cut back the number of posters sharply. The Moderates' four different posters, totaling 35,000 (compared with 80,000 in the previous election campaign), are expensive, relatively speaking. They are costing the party about 0.4 million kronor, while the Liberal Party is printing up 15 different posters, totaling 150,000 (50,000 more than for the previous election). But the Liberal Party's posters are small, cheap, black-and-white posters, a novelty in the last campaign which they have developed further.

In the previous election campaign, the Social Democrats' election workers put up 635,000 socialist posters around the country. This year they are putting up one-fourth as many, or a total of 175,000 posters of six different kinds. The Center Party, too, has been more economical, putting up 80,000 posters of six different kinds (150,000 in the previous election campaign). The VPK put up 90,000 posters of nine different kinds.

In human capital, the conservatives are clearly inferior to the "socialists," and the ratio of party members who are active increases gradually along the political scale from right to left, from the Moderates' figure of 10 percent of their membership being active to the VPK's figure of 100 percent of their membership being more or less active.

The conservatives are dependent upon more formal election campaigns, to a greater extent, using advertising agents and TV contacts with the voters, for example. Thus, for example, the Moderates work in close contact with the Kreab advertising agency.

"They sit in on the meetings of our election leadership, and, besides, they are also old party comrades," says chief of information Mats Johansson.

Instead, the Moderates are investing more money in advertising this year "in order to reach party switchers--the hesitant voters we want to reach first of all." The party's broad, general "message" is "the future in freedom." "We have felt that it is important for us to concentrate ourselves. One cannot sell just any old message. We are concentrating on the tax question, among other things, because a SIFO [Swedish Institute for Public Opinion Polls] study of ours showed that our standing with the voters is good up to that point," says Mats Johansson.

Collection Gave 2 Million Kronor to the Moderates

In 1976 the party got approximately 5 million kronor from business--a subsidy which now will be discontinued, according to the party treasurer, Hans Walstein. In order to make that loss good, the Moderates conducted a collection in 1978-1979 which they called The Challenge and which brought in approximately 2 million kronor to the party treasury (where there is a total of approximately 25 million kronor this year, 2.2 million kronor of which consist of members' dues).

The Liberal Party concentrates on printed material, and primarily on 14 different pamphlets in which the party presents its views on various questions. A total of 6.5 million of them go to households, and, over and above that, they also have pamphlets directed at specific target groups such as first-time voters, retirees and immigrants.

Center Party's Budget Doubled

The Center Party has practically doubled its central election budget, by comparison with the election campaign of 1976, to 6.7 million kronor. But the party consequently also has fallen behind and needs to catch up. In June 1979 this party's proportion of the electorate, according to SIFO, is 16 percent, and that is 5.5 percent less than they had in the same month of 1976. In proportion, with the outcome of the election, the party lost even more: when Thorbjorn Falldin became prime minister, he did so on the strength of nearly one-fourth of the votes which were cast, or 24.1 percent.

According to the estimate of the party secretary, Allan Pettersson, the local and regional election budgets are still three times as big as the central one, and the 50,000 election workers will be responsible for an important part of the vote canvassing.

Among other things, the party wants to get its lost voters back with 9.4 million election newspapers and pamphlets sent out to households, which is an increase of more than 200 percent over the distribution on the occasion of the previous election. The propaganda directed at target groups--less important than in the previous election--goes to first-time voters, retirees and the historic base of the party's membership, which is the farmers.

The Center Party has also more than doubled its central advertising budget. "We only have 4 percent of the daily press, and advertisements give us a chance to get in contact with voters whom we cannot reach personally," comments Allan Pettersson.

Socialist Campaign Fund of 4 Million Kronor

With the "socialistic" rose as their symbol and the theme "Sweden needs a Social-Democratic government," the Social Democrats want to return to power.

Generally speaking, the Social Democrats' election campaign started when the party left the Chancellery in 1976. Anxious sympathizers began to affiliate themselves with the party, and from September 1976 to September 1977 the party got 50,000 new members. Collections for the so-called campaign fund were started, and they brought in 4 million kronor, according to ombudsman Lars Hjalmarsson.

"It was just what was needed. Quite simply, we are in need of money and skipped expensive initial campaign efforts and really cut back on posters. In actual money value, we are almost expending less than in the previous election, but we presumably will be forced to exceed our budget."

Strang's Letter to Retirees

It is reliable Gunnar Strang, who is 73 and is perhaps the party's most important personage and symbol, who, along with others, is to attract voters back to the party. His list of election speeches to be made is almost oversubscribed, and, among other things, 1.3 million retirees are receiving a letter from the former finance minister.

Out of approximately 14 million copies of election newspapers, pamphlets and other printed material, about half goes out to all households, while the other information is directed to many different target groups: retirees, young people, families with children and homeowners, and smaller editions are directed to active voters.

In order to reach first-time voters, the party also is investing 0.2 million kronor in the showing of advertising movies in auditoriums. The Social Democrats are also the party which is concentrating the most on "articles" (caps, matchboxes, etc.), which are budgeted at 0.5 million kronor.

Operation Doorknocking

Operation Doorknocking is important in the socialist campaign. "Nothing goes by mail to an addressee without election information to families with children," says Lars Hjalmarsson. "We are also concentrating especially on election districts where voting in elections has been low. With the help of the SCB [expansion unknown] surveys, we know that in such districts the majority votes Social Democratic, while the conservatives dominate in districts where the voting is high."

The SAP's [Socialist Workers Party] and the LO's [Swedish Federation of Trade Unions] election campaigns are combined to such an extent that it is hard to distinguish one from the other, but in addition to the unions' allocation to the party's election fund (and an "allocation" of people, above all), the LO also carries out certain independent election activities at a cost of approximately 4 million kronor, half of which are carried out centrally and the rest through national trade unions, according to the LO's chief of information, Harje Larsson.

The 2 million kronor invested centrally were used, among other things, for an election newspaper and a pamphlet about wage-earner funds (which were printed up in the spring) for all LO members (2 million copies of each). Furthermore, the LO also printed material which was directed primarily at its own election workers, who, more than previously, had been trained to carry out "mouth-to-mouth contact" with voters.

SAF Campaign--5 Million Kronor

Therefore, the LO this year traveled together, in the election campaign, with its counterpart, the SAF, among others, which invested a little more than 5 million kronor in three different campaigns, according to Director Sture Eskilsson. The "speed up Sweden!" bus tour (a slogan which was swiped from the Social Democrats) cost 4 million kronor out of the SAF's information budget. The SAF carried on a campaign against the wage-earner funds in cooperation with the Industrial Federation, the SHIO [expansion unknown] and the Merchants' Federation at a cost of a little more than 100,000 kronor for conferences, advertisements and pamphlets.

The last campaign before midsummer, "Bet on Yourself!" (in cooperation with the Industrial Federation) was directed at first-time voters. A newspaper (with 300,000 copies), advertisements and a few thousand posters cost a little more than 1 million kronor, according to Sture Eskilsson.

The Trade and Industry Fund, with a capital of approximately 7 million kronor, of which the SAF is one of the members, is also publishing, through Timbro, its publishing house, its Opinion book series for the market economy with a subscribed edition of 3,500 to 4,000 copies, a publication at a loss which has cost approximately 1 million kronor up to the present.

The SAF Takes a Break

The SAF is taking a break from its campaigns during the actual election campaign in order to be able to return in the fall. On the other hand, the Svenska Foretagares Riksforbund [Swedish Industrialists' National Federation], (with approximately 25,000 individual members] can think about jumping directly into the election campaign. The Svenska Foretagares Riksforbund has a reserve of 100,000 kronor in its hip-pocket to draw from for an advertising campaign in the final phase of the election campaign "about the subject which is most important to us--socialized, or free, trade and industry--which is put in the background too much in the debate," says Managing Director Sten Akerstam, of the Svenska Foretagares Riksforbund.

The Svenska Foretagares Riksforbund has an annual budget of from 750,000 to 800,000 kronor for information campaigns on that same theme. This year the federation has collected an additional 0.4 million kronor from its members, and between February and June of this year it came out with a campaign of its own against the wage-earners' funds at a cost of 1.2 million kronor for advertising and half a million pamphlets for households.

Number of election workers:

Socialists + VPK, 379,000
Center Party + Moderates + Liberal Party, 67,000

While the conservative bloc has the preponderance in regard to money, the Social Democrats and the VPK have considerably larger resources where human capital is concerned.

VPK

	1,000's of kronor	Change, in percentage
Advertisements	100	+ 100
Printed material	500	+ 37
Posters	100	- 50
Other advertising	40	+ 100
Organizational costs, etc.	1,000	+ 64
Totals	1,740	+ 45

Number of election workers: 29,000

Social Democrats

	1,000's of kronor	Change, in percentage
Advertisements	4,000	+ 14
Printed material	2,500	- 17
Posters	1,500	- 25
Other advertising	500	+ 150
Organizational costs, etc.	3,500	+ 17
Totals	12,000	+ 3

Number of election workers: 350,000

Liberal Party

	1,000's of kronor	Change, in percentage
Advertisements	850	+ 13
Printed material	1,725	+ 213
Posters	150	+ 87
Other advertising	75	+ 25
Organizational costs, etc.	700	- 5
Totals	3,500	+ 59

Number of election workers: 7,000

Center Party

	1,000's of kronor	Change, in percentage
Advertisements	2,500	+ 117
Printed material	2,240	+ 49
Posters	510	+ 13
Other advertising	100	+ 100
Organizational costs, etc.	1,350	+ 80
Totals	6,700	+ 97

Number of election workers: 50,000

Moderates

	1,000's of kronor	Change, in percentage
Advertisements	2,500	+ 67
Printed material	1,250	+ 25
Posters	370	- 7.5
Other advertising	250	+ 52
Organizational costs, etc.	430	- 46
Totals	4,800	+ 33

Number of election workers: 10,000

Socialists and Moderates cut down on posters.

The socialists, the Center Party and the Moderates invest the greater part of their central election budgets in advertisements, while the Liberal Party gives priority to pamphlets and concentrates on individual posters. The Moderates wanted to obtain an agreement on reduced use of posters with the other parties but got the brush-off. A certain portion of the central funds is invested in the local party districts.

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COUNTRY SECTION SWEDEN

SVENSKA PETROLEUM BECOMING MAJOR CRUDE OIL BUYER

Stockholm VECKANS AFFARER in Swedish 9 Aug 79 pp 15-16

[Article by Ake Landquist: "Svenska Petroleum's New Role Is That of Saving the Lives of Oil Companies in Need of Raw Materials"]

[Text] A cross section of Sweden's oil industry is to be found in Svenska Petroleum. That company, which is 3 years old, has been built up with people who came from all the large oil companies. The number of employees has increased from 9 in the first year to 60 this year--because Svenska Petroleum Exploration was brought in as a subsidiary, among other reasons.

The state oil company, Svenska Petroleum, is moving ahead rapidly as one of this country's biggest buyers of crude oil, chiefly by taking over the less profitable big customers from the international oil companies. During the oil crisis, in fact, a new, house-trained Svenska Petroleum developed. The negotiations going on at present could result in the company's becoming the government's tool for creating new refining capacity.

The year 1979 is becoming a memorable year in the history of the oil industry for the following reasons:

--It is another year of crisis, with tremendous price increases. Quotations on the spot market are breaking one record after another.

--The oil market in Sweden continues to shrink. Businesses have had to streamline and are being forced into each other's arms.

--The international oil companies Gulf and Shell are uniting in a warehousing and distribution program of cooperation which is unique in the world.

--Svenska Petroleum is buying an interest in British Petroleum.

--A middle-class government's price policy is helping the state oil company to grow into one of the biggest ones in the market.

The year 1979 is becoming the year of the big explosion for Svenska Petroleum (SP). The company's share of the total Swedish oil market is increasing from a scant 5 percent at the beginning of 1979 to between 10 and 15 percent for 1980. "In fact, this is the 'year of truth' after all the accusations we have had to endure from competitors for not taking the responsibility for supplying oil," says the SP's managing director, Sture Agvald, who is 61 years of age.

Svenska Petroleum is Envoy Arne S. Lundberg's creation. The former head of the LKAB Mining Company is the chairman of the board of directors. Sture Agvald, formerly with Mobil, was minister without portfolio for Arne S. Lundberg. It had been his idea to remain on until his retirement, but Arne S. Lundberg had another idea. Sture Agvald became the managing director in order, in Lundberg's words, "to perform a different kind of compulsory service."

Svenska Petroleum, which now is owned by Statsforetag and Vattenfall on a 50-50 basis, came into existence in 1976 (formerly, it was LKAB and Vattenfall). In its first year in operation, which was 1977, the company sold 1.7 million tons of oil products. Last year the volume decreased to a scant 1 million tons. The reason for this was that Vattenfall dropped out as a buyer. Nuclear power had made heavy oil unnecessary for the production of electricity. The chief reason for forming a government oil company was to have it contribute to supplying Sweden with oil. The SP made its debut on the Swedish market when it was advantageous to buy refined products on the spot market. Swedish oil companies with their own refineries lost hundreds of millions of kronor on their refineries. Through low-priced spot purchases, the SP was able to establish itself on the market under a shower of critical abuse from competitors for not contributing to the providing of oil.

The company began to cooperate with Svenska BP [Swedish British Petroleum] on storage and distribution. Last summer, the companies also entered into a refining agreement. Svenska Petroleum began its own refining last fall just before spot prices exploded upward and it suddenly became profitable to do refining oneself.

New Groupings

In order to counter the cooperation between British Petroleum and Svenska Petroleum, Shell and Gulf began to investigate the conditions under which they would agree to cooperate. This fall, those companies will form a joint subsidiary for storage and distribution. Suddenly, the Swedish oil market was made up of constellations, as follows:

--British Petroleum and Svenska Petroleum cooperated with each other.

--Shell and Gulf followed their lead.

--OK--the Swedish Oil Consumers' Union--and Texaco had already gone together on the Scanraff refinery in Brofjorden earlier.

--A number of small Swedish companies (together with municipalities and county councils) have come together under Svenska Petroleum, which is coming to play the part of a provider of materials.

Esso is the only one of the larger companies which remains by itself, but Esso has slimmed down a great deal under Managing Director Bengt I. Sjogren--from a total share of the market of 18 percent in 1967 to approximately 7 percent at present. At the same time, the company has diversified into petrochemistry and liquefied petroleum gas and has built up Sweden's largest chain of motor hotels. "A deliberate restructuring," says Bengt I. Sjogren.

Svenska Petroleum has recently put its cooperation with British Petroleum on a permanent basis. That was accomplished through an agreement which goes into force the beginning of next year.

The SP is buying 22 percent of British Petroleum's refinery in Goteborg. As a result, the company now has a refinery capacity of 1 million tons. British Petroleum retains approximately 4 million tons.

British Petroleum is forming a subsidiary for distribution and storage and is selling 20 percent of it to Svenska Petroleum. That means that the latter then will have a storage capacity of 1.5 million cubic meters. The company also has a 3-year option on an additional 15 percent of the company.

British Petroleum sells crude oil to Svenska Petroleum. The agreement will run for 10 years. In 1980, the volume will be 500,000 tons, and it will increase by 100,000 tons per year thereafter. The last 5 years, deliveries will amount to 1 million tons per year--that is, they will be equal to the SP's entire refining capacity in Goteborg. The company will cooperate in prospecting for and extracting crude oil all over the world.

"It is almost a question of integrating Svenska Petroleum and British Petroleum. Soon it will only be the S and the B that distinguishes one from the other," comments an oil company director ironically.

British Petroleum, which earlier sold all its installations in Norway to the Norwegian Government, can cut down in Sweden by selling its excess capacity to the state-owned firm, Svenska Petroleum. "It was a good opportunity to make a contribution to the payment of some of our fixed costs. We sold for economic and operational reasons," says British Petroleum's deputy managing director, Sven Nyberg.

Multinational Corporations Withdrawing

The intergrated multinational oil companies have reduced their share of the market in Sweden during recent years, and especially in regard to oil for heating. In 1974, the five largest ones--British Petroleum, Gulf, Shell, Esso and Texaco--had a 54-percent share of the market. In 1977, it had dropped off to 44 percent. The latest development--when Shell and Esso canceled their contracts with their bigger customers for light heating oil--means that those companies are cutting back even more.

The government's energy bill says: "From the government's point of view, there is reason to attach special importance to the international corporations' willingness and ability to commit themselves to supplying the Swedish market--through the making of deliveries of crude oil over the long term, for example."

The objective of the government's oil policy, according to the energy bill, is "to bring about an increased degree of reliability, or predictability, in the supplying of oil to Sweden over both the short and the long term." Svenska Petroleum is the instrument for putting the government's oil policy into effect.

The international corporations are now being forced out of certain segments of the market. They are letting large customers go and holding on to the more profitable small customers--the homeowners. Big customers are being turned over to Svenska Petroleum.

New customers have also been gathered together around the government oil company, and there are a good many more of them than the SP can take care of, but the outline of the Svenska Petroleum of the future is beginning to take shape. The company is becoming an organization for the procurement of materials. Other oil companies are becoming elements in the market which is conducted by Svenska Petroleum. Sture Agvald says, "That is a result of the fact that the flow of crude oil is changing its direction. A number of companies which are dependent upon the spot market have gotten into the hands of middlemen. No possibility exists for them to buy crude oil, get it refined, distribute it and get the products sold which they do not need themselves. In such a situation, a collecting company is needed. And we are getting a circle of customers based on our possession of crude oil instead of being tied to the spot market, as formerly." The company's share of the market can come to as much as 10 to 15 percent as early as 1980. In volume, that amounts to from 3 to 4.5 million cubic meters. But the company's role as a procurer of raw materials can become a big one--perhaps involving one-third of Swedish consumption--within a year or two. That depends upon how much crude oil Svenska Petroleum can procure and what conditions the company can offer. Both EFO Oil (owned by the Malardalen districts), which buys 2 million tons per year, and Agro Oil (the farmers' oil company), which buys 1 million tons

per year, are interested in cooperating with Svenska Petroleum "under commercial conditions"--that is, if the price is lower than the spot market prices.

At present, Svenska Petroleum has a crude oil agreement with British Petroleum. Furthermore, the company has "its own" oil from the Norwegian North Sea (the Noco contract). That amounts to 200,000 cubic meters now, and in 1982 the volume will become 800,000 cubic meters per year. Svenska Petroleum also has crude oil agreements with Iraq and Iran which are to be renegotiated soon, and it recently concluded a 2-year agreement with Nigeria. Discussions are also going on with other countries, including Saudi Arabia, for example.

The prospecting company Petroswede is now a wholly-owned subsidiary of Svenska Petroleum. As of the beginning of next year, that company's name will be Svenska Petroleum Exploration AB. One of that firm's tasks will be to search for oil in the Norwegian North Sea (a section of the Noco contract), in the British North Sea (three concessions) and together with British Petroleum on a worldwide basis. Furthermore, they have concessions in Tunisia and Algeria. "Their own" crude oil through prospecting is what they dream about in Svenska Petroleum.

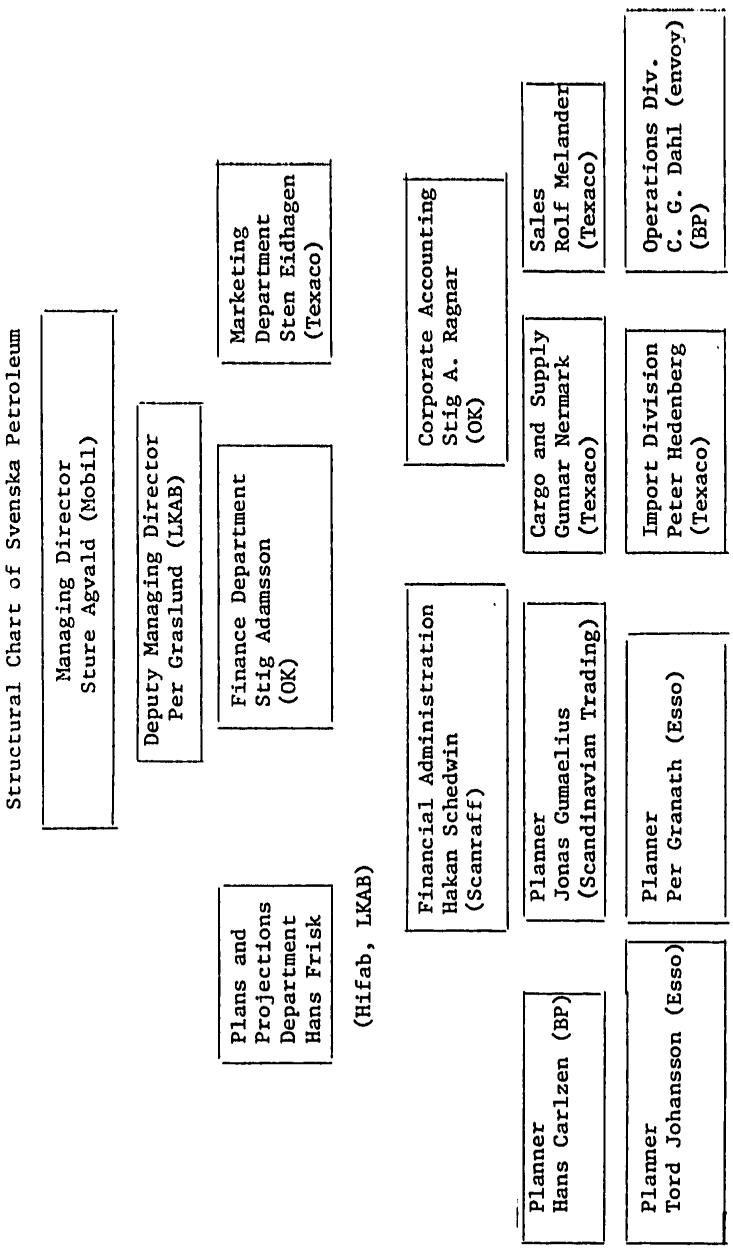
New Invitation From OK

The company has to provide itself with more refining capacity. Negotiations are going on between Svenska Petroleum, OK-Texaco and Nynas under the leadership of Statsforetag's Gunnar Agfors. Earlier, OK and Texaco offered the government 30 percent of Scanraff. That was during the "difficult years," when the spot market prices were lower than the refinery-gate price. The government missed that chance. Now another offer is available:

OK-Texaco has applied for a concession to move Scanraff up from 8.3 to 10 million tons per year. The increase, amounting to 1.7 million tons, is being offered to the government. "Thirty percent is a question for negotiation," the manager of OK, Leif Lewin, told VECKANS AFFARER.

With a fairly small investment of from 100 to 150 million kronor, Scanraff's capacity can be increased to 11.4 million tons per year, but OK-Texaco is said to want to go even further: an expansion of Scanraff to 15 million tons per year. "That calls for a capital investment of several hundred million kronor, but that is still cheaper than to build Statsraff [government refinery], and the state is welcome to participate in both alternatives," says Leif Lewin.

Furthermore, the manager of OK is said to want to build a catalytic cracker (catcracker) at Scanraff. It can "crack down" heavy oil to lighter products. Since crude oil is going to become heavier and heavier in the future, such crackers will be needed. The cost of a capacity of from 1 to 1.5 million tons per year is at least a billion kronor. At the same



time the structure of the Swedish oil market is changing, important strategic decisions have to be made. The question is whether Svenska Petroleum will go its own way (a Statsraff) or will go together with OK and Texaco in an expansion of Scanraff (to which a Statsraff would be added), plus an installation for catalytic cracking. According to Sture Agvald, there also is a middle course--namely, that SP would assist in making maximum use of the capacity of the Swedish refineries. They would get the remaining crude oil refined at some installation outside of Sweden.

Anyhow, it is an expensive decision. Already, the present expansion--the big explosion--is calling for a fivefold increase in share capital from 50 million to 250 million kronor.

"Identification Card" of Svenska Petroleum AB:

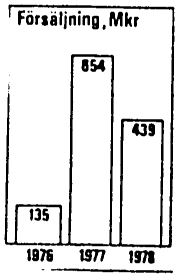
Turnover Increased Fivefold This Year

Svenska Petroleum began its activities in the fall of 1976. The firm's initial capital (share capital) was 20 million kronor, half of which was contributed by the two owners, LKAB and Vattenfall. During 1977, the share capital was doubled to 40 million kronor. The doubling of the share capital explains the sharp increase in solvency from 27 to 56 percent during 1977. The short time the company has been in business makes a comparison of various key figures almost meaningless. During 1978, the company's invoices dropped off because deliveries of oil to Vattenfall practically stopped. In spite of that, profits were improved to a little better than 4 million kronor, which yielded earnings of 8 percent, before taxes, on the initial working capital.

This year, invoices will go up and up. The SP probably is going to sell between 2 and 2.5 billion kronor worth of oil.

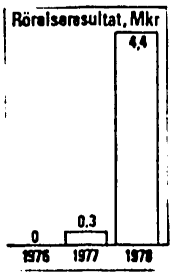
Sales, in millions of kronor

1976 1977 1978



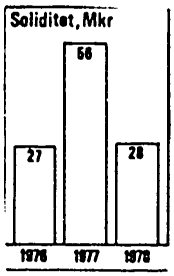
Company's profits, in millions of kronor

1976 1977 1978



Solvency, in millions of kronor

1976 1977 1978



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